

Online Retail Analysis Report

Project Overview:

The Online Retail Project aimed to analyze customer behavior, product performance, and overall business trends within an e-commerce platform. This comprehensive analysis utilized SQL for data extraction and Python for in-depth analysis and Tableau for visualization.

Tableau Dashboard can be accessed from [here](#).

Key Findings:

1. Customer Analysis

Demographics Overview

- The customer base is predominantly from the United Kingdom with 3950 Customers followed by Germany, France and Spain with 95, 87 and 35 customers respectively.

Customer Metrics

- Customer Lifetime Value (CLV):
 - Average CLV is \$1898.46, indicating strong potential for customer retention strategies.
- Customer Average Order Value:
 - Average Order Value is \$376.36, which can help in making informed decisions to optimize pricing, marketing strategies, and overall customer experience.
- Purchase Frequency:
 - On Average each Customer makes 139 purchases.
- Frequency of Orders by Customers:
 - CustomerId 14911 made the most no of transactions (248), followed by 12748 (224), 17841 (169) and 14606 (128).

2. Product Analysis

Top-selling Products and Categories

- Identified top-performing products and categories contributing significantly to overall revenue which are as follows:

index	StockCode	Description	sum(quantity)
0	84077	WORLD WAR 2 GLIDERS ASSTD DESIGNS	53847
1	85099B	JUMBO BAG RED RETROSPOT	47363
2	84879	ASSORTED COLOUR BIRD ORNAMENT	36381
3	22197	POPCORN HOLDER	36334
4	21212	PACK OF 72 RETROSPOT CAKE CASES	36039
5	85123A	WHITE HANGING HEART T-LIGHT HOLDER	35025
6	23084	RABBIT NIGHT LIGHT	30680
7	22492	MINI PAINT SET VINTAGE	26437
8	22616	PACK OF 12 LONDON TISSUES	26315
9	21977	PACK OF 60 PINK PAISLEY CAKE CASES	24753

4. Market Basket Analysis

Product Associations

- Discovered product associations, enabling strategic product bundling.

The Products which are bought together as well as the number of time they are bought together are as follows:

S.N.	ProductList (StockId)	NoOfTimes
0	20914,21216,21218,21531,21533,21539,21843,21844,22070,22637,22795,85066,85123A	5
1	84997A,84997B,84997C,84997D	4
2	23238,23240,23241,23242	4
3	21931,22379,22385,85099B	4
4	20969,20971,22147,22149,22273,22568,22569,22570	4

Recommendations

Targeted Marketing:

- Tailor marketing campaigns to specific Countries, leveraging insights from the demographics analysis.

Product Bundling:

- Implement product bundles based on market basket analysis to increase average order value.

Optimize Pricing:

- Optimize Price by leveraging insights from Customer Average Order Value, and recommend discounts/Offer based on that.

Personalized Customer Engagement:

- Implement personalized communication strategies for different customer segments leveraging the insights from Frequency of Customers Metric.

This report provides a comprehensive overview of the Online Retail Project, offering actionable insights for strategic decision-making and business improvement.